Atmospheric Pollutant Loading to Olympic, Mount Rainier and North Cascades National Parks: Spatial and Temporal Variability and Linkages to Trans-Pacific Air Masses

Study Description:
Studies indicate that air pollutants originating in Europe and Asia remain airborne for thousands of miles across the Pacific Ocean and deposit in snow at relatively high elevations in North America. These contaminants may accumulate in annual snowpack. Once deposited, many pollutants, particularly semivolatile organic compounds, concentrate in foodwebs, threatening the viability of aquatic and terrestrial ecosystems. Atmospheric scientists describe the U.S./Canada border as the latitude most likely to receive these trans-Pacific air masses. Over a three-year period, snow samples were collected at several sites in Olympic, Mount Rainier and North Cascades National Parks. The study was designed to determine the seasonal flux, and spatial and interannual variability of semivolatile organic compounds in snow deposition.

Study Locations:
Olympic, Mount Rainier and North Cascades National Parks

Media Sampled and Parameters Analyzed:
Snowpack was analyzed for a number of semivolatile organic compounds.

Study Timeline:
Samples were collected and analyzed in 2004-2007. A journal article describing the project is expected in 2012.

Agencies and Partners:
U.S. Geological Survey
Oregon State University
National Park Service

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